WHAT IS CLAIMED IS:

1. A bicycle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly movable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining a top portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge at least partially defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said piston, said shaft and said control assembly to said reservoir.

2. The fork of Claim 1, wherein said bottom portion of said damping cartridge defines a lower control assembly permitting fluid to enter said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels.

3. The fork of Claim 2, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

4. The fork of Claim 3, wherein said upper control assembly comprises compression damping force by means of a shim stack.

5. The fork of Claim 3, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

6. The fork of Claim 5, further comprising a lever for operating said lock-out valve positioned at the top portion of said upper tube.

7. The fork of Claim 6, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

8. The fork of Claim 7, further comprising a control knob connected to said control rod, wherein moving said control knob results in movement of said control rod.

9. The fork of Claim 7, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

10. The fork of Claim 9, wherein said blow off valve is adjustable to permit said threshold blow off pressure to be changed.

11. A bicycle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining an upper portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge defining a reservoir, said bottom portion of said damping cartridge defining a lower control assembly permitting fluid to enter said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said shaft and said upper control assembly cooperating to define a flow channel from said chamber through said shaft and said upper control assembly to said reservoir, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

12. The fork of Claim 11, wherein said upper control assembly comprises compression damping force by means of a shim stack.

13. The fork of Claim 12, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

14. The fork of Claim 13, further comprising a lever for operating said lock-out valve positioned at the top portion of said upper tube.

15. The fork of Claim 13, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

16. The fork of Claim 15, further comprising a control knob connected to said control rod, wherein moving said control knob results in movement of said control rod.

17. The fork of Claim 15, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

18. The fork of Claim 17, wherein said blow off valve is adjustable to permit said threshold blow out pressure to be changed.

19. The fork of Claim 13, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

20. The fork of Claim 13, wherein said blow off valve is adjustable to permit said threshold blow out pressure to be changed.

21. A bicycle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining an upper portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said shaft and said control assembly to said reservoir, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

22. The fork of Claim 21, further comprising a lever for operating said lock-out valve positioned at the top portion of said upper tube.

23. The fork of Claim 22, further comprising a spring located in said upper tube above said cartridge and below said control assembly.

24. The fork of Claim 23, wherein said bottom portion of said damping cartridge defines a lower control assembly permitting fluid to enter said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels.

25. The fork of Claim 24, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

26. The fork of Claim 25, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

27. The fork of Claim 26, further comprising a control knob connected to said control rod, wherein moving said control knob results in movement of said control rod.

28. The fork of Claim 26, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

29. The fork of Claim 28, wherein said blow off valve is adjustable to permit said threshold blow off pressure to be changed.

30. The fork of Claim 21, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

31. The fork of Claim 30, wherein said blow off valve is adjustable to permit said threshold blow off pressure to be changed.

32. The fork of Claim 21, wherein said bottom portion of said damping cartridge defines a lower control assembly permitting fluid to enter said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels.

33. The fork of Claim 21, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

34. The fork of Claim 21, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

35. A bicycle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining an upper portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said shaft and said control assembly to said reservoir, further comprising a blow off valve positioned at said bottom portion of said cartridge to

permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

36. The fork of Claim 35, wherein said blow off valve is adjustable to permit said threshold blow off pressure to be changed.

37. The fork of Claim 36, further comprising a spring located in said upper tube above said cartridge and below said control assembly.

38. The fork of Claim 37, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

39. The fork of Claim 38, further comprising a lever for operating said lock-out valve positioned at the top portion of said upper tube.

40. The fork of Claim 39, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

41. The fork of Claim 40, further comprising a control knob connected to said control rod, wherein moving said control knob results in movement of said control rod.

42. The fork of Claim 35, further comprising a spring located in said upper tube above said cartridge and below said control assembly.

43. The fork of Claim 35, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

44. The fork of Claim 35, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

45. A bicycle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

a shaft extending axially from said top portion of said upper tube;

a main damping piston connected to said shaft, said piston at least partially defining a damping chamber;

said fork defining a low speed compression circuit and a rebound circuit;

a control assembly located at said top portion of said upper tube, said control assembly including a first control connected to said low speed compression circuit manually adjustable from external said assembly between at least a first position wherein fluid is able to flow through said low speed compression circuit and a second position wherein flow through said low speed compression circuit is prevented, said control assembly further including a second control connected to said rebound circuit manually adjustable from external said assembly between at least a first position wherein a first rate of flow through said rebound circuit is permitted and a second position wherein a second rate of flow through said rebound circuit is permitted, wherein said first rate of flow is higher than said second rate of flow, said control assembly further comprising a third control connected to a restrictor communicating with said low speed compression circuit, said restrictor manually movable from external said assembly between at least a first position wherein said restrictor provides at least a first amount of resistance to flow through said low speed compression circuit and a second position wherein said restrictor provides a second amount of resistance to flow through said low speed compression circuit.

46. The fork of Claim 45, wherein said low speed circuit extends through said control assembly.

47. The fork of Claim 45, wherein said rebound circuit extends through said control assembly.

48. A shock absorber, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly movable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining a top portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge at least partially defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said piston, said shaft and said control assembly to said reservoir.

49. The shock absorber of Claim 48, wherein said bottom portion of said damping cartridge defines a lower control assembly permitting fluid to enter said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels.

50. The shock absorber of Claim 49, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

51. The shock absorber of Claim 50, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

52. The shock absorber of Claim 51, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

53. The shock absorber of Claim 52, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

54. The shock absorber of Claim 48, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

55. A bicycle, comprising:

a frame;

a suspension fork connected to said frame and comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly movable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining a top portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge at least partially defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said piston, said shaft and said control assembly to said reservoir.

56. The bicycle of Claim 55, wherein said bottom portion of said damping cartridge defines a lower control assembly permitting fluid to enter said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels.

57. The bicycle of Claim 56, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

58. The bicycle of Claim 57, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

59. The bicycle of Claim 58, further comprising a control rod extending through said shaft, wherein movement of said control rod adjusts flow through a rebound circuit positioned within said cartridge.

60. The bicycle of Claim 59, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.

61. A vehicle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly movable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining a top portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge at least partially defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said piston, said shaft and said control assembly to said reservoir.

62. A vehicle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining an upper portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge defining a reservoir, said bottom portion of said damping cartridge defining a lower control assembly permitting fluid to enter

said cartridge from said reservoir through said lower control assembly, but preventing fluid from exiting said cartridge at low pressure levels;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said shaft and said upper control assembly cooperating to define a flow channel from said chamber through said shaft and said upper control assembly to said reservoir, wherein said upper control assembly comprises a one-way valve which prevents the flow of fluid from said reservoir through said control assembly when said shaft and said piston move upward away from said bottom portion of said damping cartridge.

63. A vehicle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining an upper portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said shaft and said control assembly to said reservoir, wherein said upper control assembly further comprises a lock-out valve which selectively prevents the flow of fluid from said shaft through said assembly and to said reservoir.

64. A vehicle front fork, comprising:

an upper tube having a top portion, a bottom portion and an intermediate portion;

a lower tube having a top portion, a bottom portion and an intermediate portion, said upper tube and said lower tube being telescopingly moveable with respect to one another;

an upper control assembly positioned at said top portion of said upper tube;

a damping cartridge positioned at least partly within said lower tube, said damping cartridge defining an upper portion, a bottom portion and an intermediate portion, at least a section of said lower tube surrounding said cartridge defining a reservoir;

a shaft extending from said top portion of said upper tube into said damping cartridge;

a main damping piston connected to said shaft and positioned in said cartridge, at least said bottom portion of said cartridge defining a lower internal chamber located below said piston, said piston, said shaft and said control assembly cooperating to define a flow channel from said chamber through said shaft and said control assembly to said reservoir, further comprising a blow off valve positioned at said bottom portion of said cartridge to permit flow through said blow off valve and into said reservoir in response to a threshold blow off pressure.